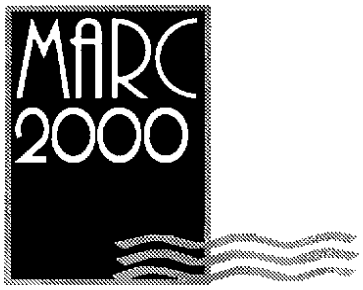

Comments on Navigation Study Draft Interim Report

Submitted, June 7, 2002

These comments are submitted on behalf of the Midwest Area River Coalition 2000 (MARC 2000). MARC 2000 is a coalition of agricultural, industrial and labor entities in the Mississippi, Illinois and Missouri River valleys concerned with the modernization of the inland river transportation system in an environmentally responsible fashion.

MARC 2000 is joined in this submission by the American Waterways Operators, Carpenters' District Council of Greater St. Louis and Vicinity, and these member companies: ADM/American River Transportation Co., Ag Processing Inc., Agribusiness Association of Iowa, Agricultural Retailers Association, Agrium, All American Coop, Alliant Energy, Alter Barge Line, Ameren, Ameren Energy Generating, American Commercial Lines, American Farm Bureau Federation, American Soybean Association, Amity Investments, Inc., Aon Risk Services of Missouri, BCI, Inc., Big Soo Terminal, Blackhawk FS, Inc., Blaske Marine, Inc., Borchers Oil, Inc., Brennan Marine, Inc., Brenntag Mid-South, Inc., Bunge North America, Inc., Bussen Terminal, Cahokia Marine Service, Cargo Carriers/Cargill, Caterpillar Inc., Cenex Harvest States, Ceres Consulting, L.L.C., CF Industries, Inc., CGB Enterprises, Inc., City of Keokuk, CoBank, Colusa Elevator Company, Consolidated Blenders, Inc., Continental Cement Company, Inc., Cora Terminal, L. P., Dairyland Power Cooperative, Dakota Bulk Terminal, Inc., Dakota, Minnesota & Eastern Railroad Corp., DeBruce Grain, Inc., Determann Industries, Inc., Dyno Nobel Inc., Eagle Marine Industries, Inc., East Side River Transportation, Inc., Economy Boat Store, Fabick Power Systems, Farm Country Co-op, Farmers Coop Association, Farmers Cooperative Elevator Company, Farmers Elevator Company of Traverse, J. Russell Flowers Inc., Garvey Marine, Inc., Gateway Arch Riverboats, Gateway FS, Inc., Grain and Feed Association of IL, Grain Processing Corporation, Great River Economic Development Foundation, Green Bay Farms L.P., Grundy County Farm Bureau, Grundy Economic Development Council, Harber, Inc., Harmony/Preston Agri Services, Inc., Hawkins Chemical Company, Holcim (US) Inc., Horner & Shifrin, Inc., Howard/Cooper County Reg. Port Auth., Humco Marine Products, Inc., IEI Barge Services, Inc., Illinois Corn Growers Association, Illinois Farm Bureau, Illinois Fertilizer & Chemical Assn., Illinois Marine Towing, Inc., Illinois River Carriers Assn., Illinois Soybean Association, Ingram Barge Company, Inland Detroit Diesel-Allison, Interstate Marine Terminals, Inc., Iowa Corn Growers Association, Iowa Farm Bureau Federation, Iowa Gateway Terminal, Iowa Soybean Association, Jacobs/Sverdrup, Jebro Incorporated, Jefferson Barracks Marine Service, Inc., Jersey County Economic Development Corp., Jersey County Grain Company, Kansas City Power & Light, Kaskaskia Regional Port Authority, Kindra Lake Towing, L.P., Kirby Corporation, Lafarge Corporation, Lewis & Clark Marine, Lewis, Rice & Fingersh, L.C., Limited Leasing Company, Linwood Mining & Minerals Corp., Lone Star Industries, Inc., Luhr Bros., Inc., Magnolia Marine Transport Co., Marquette Transportation Co.,

Inc., Massman Construction Co., MEMCO Barge Line, Merrill Marine Services, Mertel Gravel Company, MFA, Inc., Midland Enterprises, Midwest Industrial Fuels, Inc., Mid-West Terminal Warehouse Company, Miller, Robert B. & Associates, Inc., Minneapolis Grain Exchange, Minnesota Agri-Growth Council, Inc., Minnesota Corn Growers Association, Minnesota Crop Production Retailers Assn., Minnesota Farm Bureau Federation, Minnesota Grain and Feed Association, Minnesota Ports Association, Minnesota Soybean Growers Association, Minnesota Wheat Research and Promotion Council, Mississippi Chemical Corporation, Mississippi Welders Supply Co. Inc., Missouri Ag Industry Council (MO-AG), Missouri Barge Line Company, Inc., Missouri Chamber of Commerce, Missouri Corn Growers Association, Missouri Farm Bureau Federation, Missouri Levee & Drainage Dist. Assn., Missouri Oil Council, Missouri Port Authority Association, Missouri Soybean Association, Monsanto, National Corn Growers Association, National Council of Farmer Cooperatives, National Maintenance & Repair, Inc., New Bourbon Regional Port Authority, New Madrid County Port Authority, Norman Bros., Inc., Northstar Navigation, Inc. (Newco), NW Agri-Dealers Association, Olympic Marine Company, Ostrander Farmers Coop, Pattison Bros. MS River Terminal, Inc., Peoria Barge Terminal, Pinnacle Transportation, Inc., Plaquemine Towing Corporation, PML, Inc./Panzera Marine Transp. Inc., Port of New Orleans Board of Commissioners, Prairie Premium Agricultural Coalition, Quad City Development Group, Ray-Carroll County. Grain Growers, Inc., River Cement Company, River Stone Group, Inc., Riverland Resources, Inc., Riverview Farm, Riverway Company, F.J. Robers Co., Inc., Sargeant Grain Company, Scott County Farm Bureau, SE Grain & Feed Dealers Assn., Seneca Transportation, Southern IL Construction Adv. Prog., Southern Illinois Transfer Company, Southern Towing Company, ST Services, St. Louis County. Port Auth/Econ. Council, St. Louis RCGA, State Steel Supply Co., John W. Stone Oil Distributor Inc., Tennessee Valley Towing, Inc., Terminal Express, Tomen Grain Company, Tri-City Regional Port District, Trinity Marine Products, Inc., TriOak Foods, Inc., Twomey Company, United Soybean Board, Upper Mississippi Waterway Assn., Upper River Services, Ursa Farmers Cooperative, The Waterways Journal, West Central IL Bldg/Construction Trades Council, Western Kentucky Navigation, Inc., Whitewater Creek Grain & Feed, Inc., Winona River & Rail, Wisconsin Agri-Service Association, Wisconsin Corn Growers Association, and Wisconsin Soybean Association.

June 7, 2002

General Comments

The Corps should be commended for working diligently through the collaborative process to achieve a workable draft document and is encouraged to release this report on time. However, this draft severely misses the mark in projecting a reasonable and qualitative indication of likely necessary large-scale navigation improvements to the Upper Mississippi and Illinois Rivers. Nor does it even recommend moving forward with proven small-scale navigation initiatives as it does for O&M efforts for the ecosystem. Overall, this report lacks appropriate balance and treatment of economic facts and implications consistent with the level of detail outlined for environmental issues.

Response: The guidance for restructuring of the navigation study allowed for identification of measures that could be recommended for implementation prior to completion of the feasibility study. However, the Interim Report will not contain any recommendations for moving forward with interim measures. Many comments were received that suggested small-scale measures such as mooring cells and guidewall extensions be considered for immediate implementation. These measures have been discussed in past efforts; however, the economic evaluation of small-scale measures has not been completed. In addition, the environmental analysis describing the impacts of incremental traffic increases from these types of measures is also not complete. Both of these evaluations will be included in the feasibility study to allow for selection of a recommended plan.

The intent of the Interim Report is to provide a framework for moving forward with the feasibility study. The biggest change in scope resulted from the broadening the Study to include an environmental restoration component. Measures for improving economic conditions such as navigation improvements will be evaluated for environmental impacts; and ecosystem restoration improvements will be evaluated for economic consequences. This balanced approach will be fully developed in the feasibility study.

While this draft attempts to underscore the future possible "breakpoint" for the environment of the river (page 109), it lacks similar appreciation for the likely economic "breakpoint" to our declining international competitiveness as a grain exporting nation and the Midwest economy. After 10 years of close work with the project team, countless public meetings with hundreds of affected stakeholders providing testimony, the inability of the team to reflect the expediency of making federal investments in a timely fashion is disappointing.

Response: International competitiveness will be evaluated in the feasibility study.

As population increases threaten the functional capacity of land, water and air, all of which are finite resources, transportation alternatives become critical in defining growth and quality of life options. Central to the choice of transportation is the fundamental understanding that when a commodity cannot move by barge on the river, it will move by truck or rail. Of those three modes of freight transportation, each in its own way impacts the environment, consumes natural

resources and presents the hazards of social impact through injury, death and property damage. When the effects of waterway transportation are evaluated independently of these fundamentals, environmental hazard is too often the sole concern.

Response: The impacts of a modal shift in commodities will be evaluated in the feasibility study.

This draft report lacks a holistic approach to assessing the environmental benefits of enhancing and encouraging the use of waterway transportation, the environmental benefits associated with longer locks and the likely impacts and any qualitative risk assessment associated with concepts and proposals that add cost and disincentive to the use of the inland waterway system. We hope that the specific comments that follow will help clarify these general comments.

Response: The economic and environmental benefits, and impacts of the waterway transportation system will be included n the feasibility study.

The potential increase in freight rates via rising fuel taxes based on inefficient operations of old facilities and rehab costs, the full cost impact on the shipping community during the periods of lock refurbishment, the measure of risk taken by the seafarer working on a tow that needs to be locked through twice versus one that does only once or not at all, and cost estimates associated with two small scale measures (more deck hands, helper boats) are four issues that should be addressed in the feasibility study, not currently identified in the interim report.

Response: The feasibility report will address these issues.

Specific Comments by Section

Following is a paragraph-by-paragraph review of the May 10, 2002 Draft Interim Report for the Upper Mississippi River and Illinois Waterway Restructured System Navigation Feasibility Study.

Preface

Pg. 2, para 2 "This report provides a blueprint…" A blueprint suggests something far more refined and specific than this report addresses. Consider changing this characterization to focus on the process, rather than the substance.

Response: Additional information has been added to Section 3 to define process. A Project Management Plan has been developed and is available for review.

Pg. 2, para 2 "nationally treasured ecological resource as well as an ***efficient national*** transportation system.

Response: Concur

Pg. 2, para 3 Preliminary conclusions and recommendations need to identify that large-scale investments are a common theme and possible solutions for resolution of traffic growth. If we step aside from trying to create scenarios in everyone's vision and compare scenarios with the premises recently accepted as part of the new Farm Bill and Maritime traffic growth expectations, then traffic growth anticipated with "reality" would require large-scale solutions. If we are not prepared to specifically identify these solutions, we should provide discussion of possible risks associated with losing international competitiveness and market growth.

Response: Feasibility study will determine needs and risks.

Participating Organizations

Please correct the listing of "National Corn Growers" to reflect the full name, "**National Corn Growers Association."**

Response: Concur.

It is our observation that "Iowa Department of Agriculture" is missing, but would defer to their wishes.

Response: Concur.

Introduction

Pg. 11 para 1 "nationally treasured ecological resource as well as an ***efficient national*** transportation system.

Response: Concur.

Pg. 11 Bullets Include additional bullets that read, "***achieve economically sustainable system***" and "***maximize operation and maintenance for economic, social and environmental sustainability***."

Response: Concur partially, wording has been revised.

Pg. 11 Bullets One of the key adjustments to the scope of the study identified in Headquarters guidance includes addressing " ***international competitiveness and the application of risk and uncertainty techniques to navigation analyses."***

Response: Will be addressed in the feasibility study.

Pg. 12 1.3 Insert, "***This study area has special agricultural significance, accounting for over 60% of grain and soybean exports moving into the world market***."

Response: Exports market discussed in section 1.6.

Pg. 12 1.3 Insert after #1, new 2: ***Full and part-time employment for over 400,000 individuals in the basin, including 90,000 manufacturing jobs***. (Price Waterhouse, 1995; and Mercer Management Study, 1995). There is no recognition of the economic linkage between the products moved on the river and the economic structure of the basin until much later in the report.

Response: Concur.

Pg. 12 1.3 Paragraphs 1 & 3: The number of locks described differ from "35 locks" to "37 lock and dam sites (43 locks)?

Response: Concur.

Pg. 12 1.3 Paragraph 3, point 1 or some other point. There are over 650 manufacturing facilities, terminals and docks in the Upper Mississippi River Basin that shipped and received tonnage in 1999 (U.S. Army Corps of Engineers Waterborne Commerce Statistics).

Response: Concur.

Pg. 12 1.3 Paragraph 3, point 4 would be more complete if it listed the number of industries dependant on the pool water source and the economic and social benefits of these economic activities.

Response: Noted.

Pg. 15 1.4.2 Reference to number of acres in refuge land status suggests that there is more than 270,000 acres. What is the number and should not the total amount be listed under pg. 12 item 1.3? (See pg. 53, 2.4.2.2.5)

Response: The correct figure is 285,000 as reported by the USFWS. The discrepancy arose between reporting only UMR ownership vs. UMR and IWW ownership.

Pg. 15 1.4.2 It is important to note at the end of this page that the EMP was reauthorized with ***"broad stakeholder support at annual levels exceeding $33 million per year with no regard to fiscal equality for comparable navigation improvements, but based on documented ecosystem needs."***

Response: Partially concur. Navigation improvement needs will be established as part of the feasibility study process.

Pg. 16 1.4.2 The reference to ongoing State investment in Mississippi and Illinois River development and protection is lacking and deserves greater expansion and specificity.

Response: The following has been included: States actively manage about 140,000 acres (state owned or General Plan lands). State Departments of Natural Resources spending for environmental management on the mainstem rivers is less than $3 million (UMRCC 2002). The states role in supporting sustainability goals from bluff to bluff will be further defined in the feasibility study.

Pg. 16 1.5 Perhaps this might be a better location to reference the impact of the waterway transportation system on the jobs base in the basin. (ref. 1.3 suggestion).

Response: Concur.

Pg. 16 1.5 Somewhere, whether under Navigation (1.4.1), Environment (1.4.2), Cultural and Social Setting (1.5) there needs to be an acknowledgement of the "***modal choice" benefits.*** One barge is equivalent to 58 semi trucks or 15 jumbo rail hoppers. Movement of freight in the basin and in the region via alternative modes has more than just a cost differential (pg. 47, 2.4.2.1.6) but has social and environmental implications. Consider inserting: ***"Waterway transportation remains the most environmentally and socially beneficial means of freight movement."***

Response: The following paragraph has been added to the Social Setting section.
Waterway transportation provides an efficient, environmentally beneficial, and safe means of freight movement. The efficiency stems from the capacity of barges where a standard 15 barge tow may carry the equivalent of 225 jumbo hopper train cars or 870 large semis. The ability to utilize inland waterways alleviates congestion on railroads and highways. The environmental benefits of waterborne transport stems from the lower fuel consumption and resultant emissions that a single tow boat has over large numbers of train engines and tractor trailers. The safety of waterborne transportation is exhibited by the foregone accidents that may occur at train crossings and on highways if commodities were shipped by alternative modes.

In addition, Headquarters Guidance reinforced the need for modal shift analysis, so please insert the IA Department of Transportation Graphic that has helped countless citizens understand the relationship between modal carrying capacities. This graphic should be a commonly-accepted addition to the Tables in the report.

Response: The basic information from the graph referenced has been described. See response 16 1.5.

Pg. 16 1.5 To reinforce the importance of the previous point, we would also refer to Headquarters Guidance Document "Upper Mississippi River and Illinois Waterway System Navigation Study – Project Guidance Memorandum, August 2, 2001, pg. 3, 9(e) regarding the importance of modal shift analyses. Once again, these environmental impacts seem to have been ignored in favor of others.

Response: [See response 16 1.5]

Pg. 16 1.6 Characterization of the movement of grain and other products falls short by not identifying the economic impact of such activity. This has long been one of the shortfalls of the Corps' methodologies. Based on 1992 data, Price Waterhouse estimated that inland waterway movements on the Upper Mississippi River and Illinois Waterway generates over $4 Billion in income and between $11-14 Billion in economic activity. At a minimum, if the Corps wishes to continue ignoring economic linkages between the river and local economy, at least quantify the transportation savings alluded to.

There is also no mention of the waterways industry being part of a complex infrastructure and that its demise will have ripple effects in the economic structure of the Midwest and in fact hurt other modes, especially short-haul railroads and truck feeder systems. We seem to be able to quantify the economic benefits from one recreation study, but not from 60 years of understanding the navigation system. Feel free to access the MARC 2000 web site at www.marc2000.org to access state and regional economic profiles (1999) developed using existing Corps of Engineers data.

Response: The Regional Economic Development benefits will be updated in the Feasibility Study. Additional information has been added stressing the importance of the in-land waterway system to the nations transportation system.

Pg. 16 1.6 Concurrently, there is no discussion on the impact on farm income in this section. As well, some discussion is necessary on the financial impact of the cities that rely on the river for water resources, delivery of goods, tourism, etc..

Response: RED analysis will be updated in the feasibility study.

Pg. 16 1.6 The section addressing the increase in tonnage provides data that is accurate, but possibly confusing to a reader unfamiliar with the river reach terminology. Pg. 12 (1.3) refers to combined tonnage of 130 million tons in the study area on the Mississippi River. This reference is for 83 million tons, presumably not accounting for the "middle Mississippi" tonnage south of the locking river.

Perhaps this report should be consistent with the Corps' most recently developed metric, "system ton-miles". This measurement illustrates the contributions a waterway makes to the entire system. It is computed by multiplying the total

distance of a trip by the tons moved. For example, if a voyage included 100 miles on the Illinois and 200 miles on the Mississippi of 5 tons, it would contribute 1,500 system ton-miles to the total of both rivers. The Waterborne Commerce of the U.S. Calendar Year 2000(WCUS) shows 45.1 billion system ton-miles for the Illinois, 93.3 for the upper Mississippi, and 126.6 for the middle Mississippi. (WCUS, Volume 5, Table 3-21, Page 3-26)

Response: Revised.

Pg. 19 1.7.1.4 Second paragraph suggests that "the ability to evaluate condition versus capacity, while attempted, was beyond the state of the art." ***What does this mean? The Great Lakes and Ohio River Division is currently using such a process to evaluate replacement of Emsworth, Dashields and Montgomery."***

Response: This paragraph has been revised to read, "…beyond the state of the art at that time." In 1994, the state of the art to predict condition and reliability of navigation structures was in its infancy. Preliminary work was initiated to determine if the condition of the structures alone would require replacement within the planning horizon. It was determined that given prudent maintenance and periodic rehab., that the lock and dam structures would remain serviceable for an additional 50 years. Additional methodology has continued to be developed in the Corps building from work completed in this study, and is being used on the Ohio River.

Pg. 21 1.7.1.5 Under the description of the Engineering Coordinating Committee, it should be noted that the Corps and its contractors ***" met with navigation industry technical experts and representatives on several different occasions to review the practical and logical application of both small-scale and large-scale engineering alternatives."***

Response: Concur. Revised per suggestion.

Pg. 22 1.7.1.6 Section 216 of the Flood Control Act of 1970 provides the authority to report to Congress on "the advisability of modifying the structures or their operation and maintenance, and for improving the quality of the environment in the overall public interest. The opening sentence of this section is technically inaccurate and leaves the impression that the original study did not address ecosystem issues. This implication is contradicted by previous statements in this report outlining how the study evolved, prior to 2001 with IPMP funding increased $7.5 million, 1995 funding increases for environmental studies, cumulative impacts added, etc. Perhaps would read more accurately with "***The restructured study has been expanded to address broader ecosystem and floodplain management….."***

Response: Concur. Revised per suggestion.

Pg. 25 1.7.2.2 In referencing the NRC report and key conclusions, it is important to include that the NRC believed that the Spatial Equilibrium Model shortcomings were so serious that it "should not be used in the feasibility study." NRC, pg. 33.

Response: Concur, revised per suggestion.

Pg. 26 **Environmental Themes & Issues (#5)** Has the increase in efficient transportation and therefore decreased wait periods by the banks (environmentally sensitive areas) been included in the net benefits to the environment? Industry representatives were informed in an April 2002 meeting that the USF&WS is reported to have stated that with increased traffic, 1200-foot locks would reduce environmental impact over the existing 600-foot locks.

Response: Will be fully evaluated in the feasibility study.

Pg. 26 **Economic Issues** While the industry understands the origin of these issues and issue papers, this report needs to identify that lack of identified investment movement is a relevant factor to U.S. competitor's actions in the marketplace.

Response: Will be addressed in the feasibility study.

Pg. 27 1.8.1 The objectives of the restructured study are also to "***address international competitiveness"*** considerations. This concept seems to be lost in this description and others throughout this document. See Guidance Memorandum, August 2, 2001, pg. 3, section 8.

Response: Will be addressed in the feasibility study.

Pg. 32 1.8.2 Small Scale measures – congestion tolls already screened out, why are we going through this exercise again. Same reasoning would prevail, that such a practice would, in fact, not adequately address the study objectives of meeting future transportation needs and could actually reduce transportation options, as well as implementability. Demand management scheduling also evaluated and found to achieve net savings of roughly 6 minutes for double lockages. In addition, documentation provided by the Inland Waterway Users Board substantiates that scheduling would not alleviate system-wide congestion, nor address system capacity needs. ***This report should dispense with these options based on adequate review completions. In addition, any small-scale alternatives are purely stop-gap while construction of large-scale alternatives are underway (refer to Feb. 1998 letter to the Engineering Coordinating Committee).***

Response: Structural and non-structural measures will be fully evaluated on the feasibility study.

Pg. 33 1.8.4 According to our records, the American Waterways Operators and Holcim (US) Inc. (formerly Holnam) were present at this meeting in November 2001.

Response: Concur.

Pg. 33 1.8.4 The vision statement and the definition of sustainability should form the basis for describing the "re-structured" feasibility study. Previous suggested additions and changes to reflect that sustainability affects implementation of both economic and environmental alternatives is missing when the only references made are to "environmental sustainability." Corps Guidance, Federal Advisory Task Force and the collaborative process refined this concept to reflect that economic activity should be evaluated for environmental impact, but so should environmental actions be evaluated for economic impact. (Ref. Definition of sustainability; August 02, 2001 Guidance Memo).

Response: Concur.

Plan Formulation

Pg. 36 2.2 The reference at the top of the page beginning with "Because of their importance to migratory and resident wildlife and international grain trade, the Navigation System and the river-floodplain ecosystem were declared "Nationally significant" by Congress in 1986" reflects the point we were making on Pg. 12 1.3 regarding balancing with the economic characterization of the system.

Response: Noted.

Pg. 36 2.2 First paragraph, revise that the statement accordingly " Existing and potential congestion, especially in southern river reaches, adversely impacts system efficiency ***and international competitiveness."*** In addition, it should be noted that this congestion also adversely affects the environment.

Response: Noted.

Pg. 36 2.2 Second paragraph reinforces the point made under 1.8.4 regarding the need to ensure "economic and environmental sustainability."

Response: Noted.

Pg. 37 Table 1 – What is "zonation" in pools?

Response: Revised to "hydraulic modifications in pools."

Pg. 37 Do recreational boats not have entrainment, drawdown, and sediment resuspension or transport considerations?

Response: Added paragraph on effects of recreational traffic.

Pg. 39 2.3.2 Goals for sustaining a navigable waterway lack the clarity necessary to reflect the scope of the study underway. Would suggest that in the first and third bullet, the word "***modernized" or "expanded"*** be added after "maintained" to reflect the fact that maintained does not account for capacity improvements and efficient service delivery, but suggests only physically keeping up the existing infrastructure.

Response: Bullet 2 has been revised to include, "potential modernization and expansion".

Pg. 39 2.3.2 These goals only reflect broad Tier 1 level goals. This section of the report needs to articulate the last 10 years of alternatives and assessments conducted that created the many Tier 2 and Tier 3 goals for sustaining a navigable waterway. If restoring natural floodplain or natural hydrology are ecosystem goals, then so too are system-wide implementation of 1200-foot locks at every dam equivalent navigation goals. If you are going to be consistent with Section 2.3.3, then this might be appropriate place to identify the implications of not building large-scale improvements as quantified in National Corn Grower Association/American Soybean Association studies and more recently in the Evans Study. What about the various Modal Shift studies conducted by the MN Department of Transportation or the USDOT that highlighted important societal implications and benefits of supporting goals that kept freight on the river when possible? What about Operation and Maintenance plans developed by the three Corps Districts over the last 40 years? Each has goals and objectives to sustaining the navigable waterway. What about the planning meetings between the River Industry Action Committee (RIAC), the Illinois River Carriers Association (IRCA) and other federal agencies to make sure safety goals and operating procedures are reviewed and achieved? **Where's the balance in this treatment compared to loading up on developments in 2.3.3?**

Response: Additional text added.

Pg. 40, UMRCC 1994 River Conference. It is unclear that the Statements/Goals/Opinions in this document form a basis of agreement through the collaborative process. Consider the following implications of statements contained:

- Point 1 contains the phrase "in situ." According to Webster, this means "in the natural or original position." Does this mean removal of the locks and dams? Who will decide what "in situ" is since there is little or no clear documentation of that state.
- Point 2 "all native ecosystem types" – is this even realistic?
- Point 3 "restore and maintain evolutionary and ecological processes" – does anyone really know what this would look like?

Response: The broad goals referenced in this section are those of natural resource managers coordinated through the Upper Mississippi River Conservation Committee. These are not put forth as a consensus agreement of the UMR-IWW Navigation Feasibility Study, rather they are suggested as examples of prior efforts.
Point 1: "in situ" refers to where things exist, it does not infer anything.
Point 2: Yes it is realistic to have a goal to represent "all native ecosystem types"
Point 3: We have abundant pre dam information and information from other rivers to estimate evolutionary and ecological processes.

Pg. 40 "A River That Works and a Working River" – similar concerns over far reaching goals and objectives that may be beyond the scope of this study. In addition, Point 4 "restore natural hydrology" – are we agreeing to suspend the intent behind eliminating extreme low-water conditions in the basin?

Response: These are similar to the question above in that these are broad goals of natural resource managers coordinated through the Upper Mississippi River Conservation Committee. They are not intended to infer the scope of the Study, but need to be considered in a broad planning framework. Stating goals does not constitute agreement.

Pg. 40 2.3.3 Would suggest including the four-year effort by government, industry and environmental groups working together to form visions, tier 1, 2 and 3 goals to improve the balance in the region. Might be worth including one or more of the Summit documents in an appendix.

Response: The results of the summit process will be used as a reference in establishing system goals and objectives.

Pg. 41 2.3.5 Congratulations. It took 40 pages, but the report finally acknowledges that people are employed and generate income from the transportation of goods!

This section would also be a great place to highlight the fact that according to actuarial tables, American citizens are willing to pay over $ 3 M to save a life. We can also describe the societal benefits associated with moving freight through communities on roads, rails or waterways. While there are always accidents involving every mode, Denver Tolliver's work and TVA studies document the benefits of waterway transportation to people and the environment.

Response: Revised to include social goals and public input. Environmental, efficiency, and safety concerns are now discussed in Section 1.5 (formerly 1.6)

Pg. 41 2.3.5 Where is the discussion of choosing options that will reduce accidents and loss of life? Are these not social goals that should be included in our assessment.

Industry has consistently applied the importance of safety on the river and the benefits that 1200-foot locks would assist in decreasing the incidents of deckhand injury and death associated with double lockage. A secondary application would be the benefits of reducing tonnage on the highways and railways and the resulting safety impacts to society. Where is the effort to expand on the Denver Tolliver work to clarify full NED benefits of this and other alternatives? Where are the air and noise pollution benefits covered?

Response: Environmental, efficiency, and safety concerns are now discussed in Section 1.5 (formerly 1.6)

Pg. 41 2.3.5 Why did you pick the results of the LTRM survey over others? Maybe you should delete this unless there is ample justification that these results are consistent with other studies conducted in the region. Our recollection is that they are not.

Response: The survey referenced in the report was a rigorous and statistically valid phone survey of people in the five-state region. We are not aware of any similar studies. We will consider the issue further in the Feasibility Study if more information is available.

Pg. 43 2.4.1 First full paragraph: There is no mention of the periodic low water conditions on the Mississippi River that allowed for "walking across" and the relevant negative economic and environmental impacts. Please also refer to pg. 55 when you accurately address the benefits of navigation dams in "stabilizing the low flow river stage."

Response: The following text was added: A less obvious disturbance in the modern era was the pre dam occurrence of extreme low flows during late summer. Anecdotal references of people crossing the channel by foot are common throughout the river system. While detrimental to efficient water transport, low flow periods were very important for a host of ecological functions.

Pg. 43 2.4.1 Does the reference to "rapid runoff also carried more sediment and nutrients to the waterways than the predevelopment landscape did" apply to all reaches of the Upper Mississippi? Documentation from the River Warren Research Committee suggests otherwise and suggests geological conditions result in comparable erosion levels in some parts of the basin.

Response: The statement is accurate in general. The proposed reference to geological conditions may be accurate in terms of the underlying geology, but the reference here is to soils.

Pg. 44 2.4.2.1.3 According to American Waterway Operators statistics, the towing companies and the number of towboats are grossly underestimated. On the Illinois River alone there are at least 74 towing companies and 476 towboats.

Response: The information provided was taken from reference USACE2000e. Please provide additional information if available.

Pg. 45 Table 3 – How is the percent of utilization calculated? Does it include the months when the river is closed? Additional comments are made elsewhere relative to these calculations for open pass on the Illinois River.

Response: Utilization reflects the total time a lock chamber is in use divided by the total time the chamber is available for use during the navigation season. Additional wording added to 2.3.2.1.1 and 2.3.2.1.2.

Pg. 48 2.4.2.1.7 Where are the economic RED benefits developed over 3 years ago? This data should be included in this section to reinforce the point made. In 1994, the benefits presented exceeded $900 Million per year, principally in water-compelled rates, thus, in addition to modal differential savings.

Response: RED will be updated in the feasibility study

Pg. 48 2.4.2.1.8 Placing the O&M costs at $175 million is misleading here compared with 2.4.2.1.9 which states they are $115 million per year. The $175 million number should only be used to document the shortfall of what essentially is needed to maintain the system from 2000 onward, despite annual Congressional appropriations closer to $148 million. To fully understand this issue, reader had to read this section, the next and then jump to 2.4.3.1.2.

Response: Concur, $175 m is projected not actual. This has been reflected in the final report.

Whether this is the appropriate location or not, it is necessary to identify and quantify the backlog of O&M projects related to navigation, flood control and the environment. According to MVD data, there was in 2001, a $61 million critical maintenance navigation backlog and another $71 million in deferred maintenance.

Response: Summary of backlog provided.

Pg. 49 2.4.2.1.10 Providing average lock delay times masks the real market cost of delays. When the market demands product, costs and prices are set based on the existing

or projected conditions. Data for the Peoria and LaGrange locks need to be shown for periods with and without open-pass. The same applies for lock capacity utilization data on the Illinois Waterway (see comparable treatment of ecosystem concerns, pg. 79).

To paint the appropriate picture "peak averages" along with "distribution of delays" and "frequency of occurrence" must be included. Another way to measure these delays could be a "ton-hour delay", calculated by multiplying the tonnage a towboat pushed by the hours delayed. To address and improve the system efficiency all the problem areas must be addressed.

Response: Table 3 has been revised to include additional information. The open pass and average delay issue will be revisited during the feasibility study.

Pg. 53 2.4.2.2.4 We believe it's important to view the levees in the basin from a systemic point of view. It is important information to convey that overall, more than 60% of the floodplain on the Upper Miss is already connected to the river and almost 60% of the Illinois River.

Response: Concur that levees need to be looked at from a systemic view, however from a ecosystem perspective, the lack of levees in one river reach is of little benefit to organisms constrained from floodplain migrations by levees in another reach.

Pg. 57 2.4.2.2.6 Can we identify what portion of habitat changes are natural progressions, rather than human altered disturbances?

Response: This section references only human mediated changes. The cause and effect from natural progression will be covered in the Feasibility Study.

Pg. 57 2.4.2.2.7 How does the habitat abundance and quality compare between Pool 6 and Pool 26, both with similar percentage of floodplain connectivity? Can you scientifically substantiate this statement largely attributing habitat abundance and quality based on this one single factor?

Response: It is difficult to compare pool 6 and pool 26 because they are in different geomorphologic regions, however the ability to move freely among seasonal habitats can be scientifically justified as one of many important attributes of habitat quality. The Feasibility Study will include more pool specific analysis.

Pg. 58 2.4.2.2.7 Table 7 does not provide a frame of reference. For example, 153 contiguous backwaters out of 300 should give greater cause for concern than out

of 10,000. There is no discussion about locations within the system, reach of the river, etc…

Response: Concur. The comment is understood and we concur to a large degree. However, many readers and collaborators will be familiar with the HNA and what the results mean. The HNA will be explicitly referenced and we will be striving for greater resolution of these issues while refining goals for the system. Additional information will be provided in the Feasibility Study.

Pg. 60-61 2.4.2.2.8 It is important, within the context of the O& M funding debate, to understand the extent to which we allocate Federal dollars to issues on the river and to separate the funding allocation for the activities listed in the bullet points. It is also important to note that Congress ultimately allocates federal resources after extensive analysis and debate, giving due consideration to other demands for federal funds.

Figure 14: The characterization of the cumulative impacts should be clearly labeled as a graphic example, so as not to be misinterpreted as a datapoint generated relationship. The "y" access has no scale, thus we do not know how big the gap is between "existing condition" and "desired state". The "x" access is only partially defined with an ending point at 2002. When does the time of interest begin? Neither the definitions of cumulative impacts or the desired states nor their sources are given. What are the assumptions and conditions of the desired state?

Response: As stated in the report, "There are several more programs and authorities that effect river habitats, but the funding allocation has not been separated from traditional river management activities for this Interim Report**." This topic will be further discussed in the feasibility study.**

The schematic diagram is clearly labeled as such, and the lack of units was intentional to imply that we have not done the analysis to quantify changes in ecosystem quality.

Pg. 61 2.4.2.3 In this section you make the statement at "a little more than one-half of the floodplain (2.6 million acres) has some level of structural flood protection. That would be 1.3 million acres. According to the chart on pg. 54 there are 1.1 million acres, which is just over 40%. How do you get to "more than one-half"?

Response: The statement was referring to urban developed area only which is about 160,000 acres with almost 88,000 acres leveed. Text was clarified.

Pg. 62 2.4.2.3 Is the summary of the Comprehensive Plan consistent with apparent recent downgrading of study scope?

Response: Summary of Comp Study is consistent with current project management plan.

Pg. 62 2.4.2.4 Second paragraph. Recreational visits to the Upper Mississippi River region exceeded 15 million trips in 2000. On page 16, it's 11 million recreational visits. What studies are you using to substantiate this statement? Are these numbers inclusive of recreation visits to lakes managed by the Corps? Would suggest some element of consistency and citation. Not to play regional favorites, but comparing visitor ship to Yellowstone sounds more impressive than Blue Ridge Parkway, NC.

Response: Revised

Pg. 62 2.4.2.4 The recreational value of the pools is not acknowledged sufficiently in this report. Nor is there a better understanding of the relationship between recreation attraction generated by existing pools and other attributes. This might be a good place in the report to acknowledge the importance of visitor centers, camping areas and access points.

Response: Noted.

Pg. 62 2.4.2.4 Second paragraph. It's wonderful that you chose to include regional economic impacts of recreation and at the same time excluded regional impacts of navigation. Maybe we should talk about how important agricultural exports are to supporting and sustaining the multi-billion dollar food and fiber industry in the U.S. to put the economic importance in perspective.

Response: RED will be updated in the feasibility study.

Pg. 62 Last paragraph. Recreational boating has increased significantly in the last 10-15 years while commercial navigation has grown at a much slower pace. A valid hypothesis is that the share of environmental damage from recreation is increasing while commercial navigation is stagnant.

Response: Recreational impacts are briefly discussed in Table 7. It is recognized that the recreational boating industry contributes to the cumulative impacts on the river system.

MARC 2000, grain companies and related agricultural commodity groups have already submitted specific comments to the Scenarios presented including alternative scenarios (see March 22 MARC 2000 Comments on Second Early Report, Sparks Companies, Inc.). However, we believe that the alteration of the less favorable scenario to reflect global non-acceptance reflects a lack of understanding of accepted and growing global practices, likely negating the usefulness of this scenario and the least favorable as plausible future condition on which to base investment decisions.

Response: Noted.

Pg. 70 Addition comments: The adjustment of yields in the Less favorable scenario due to GMO assumption change is unacceptable. According to our understanding, Sparks did not ajust yields upward because of GMO in other scenarios. Equal treatment of this issue is required. GMO assumption change should be placed in the Least Favorable scenario. There is insufficient documentation provided to demonstrate how yield growth is going to moderated. Is there some mysterious crop secret our competitors are developing? Unlikely considering the vast majority of crop breeders are trained in the U.S. colleges.

The Ethanol scenario, under Least Favorable, does not take into account the very likely boom in competitor ethanol production for their own use (China is building a billion gallon plant, and a significant portion of Brazil's energy comes from ethanol, albeit bagasse from sugar cane).

Response: Noted. Consideration of GMO was taken into account for each scenario.

- Pg. 75 Paragraph 1: After stating that " the environmental impact of commercial vessels have been the subject of many studies…" there is neither discussion of the results nor any studies of recreational craft. One study done by a basin state showed that most of the damage to riverbanks was the result of high velocity, high wake creating recreational vessels.

Response: Recreational impacts are briefly discussed in Table 7. It is recognized that the recreational boating industry contributes to the cumulative impacts on the river system.

Pg. 75 2.4.3.2 The statement "The difference between the current condition and the desired condition represents a base level of restoration needed to achieve a desired and sustainable condition within the current system. It is important to emphasize that this is an existing need" should be amended. **We all may have "desired states" in mind, but we must also understand that it might not be necessary for sustainability.**

Response: Concur. Sustainability discussion revised to reflect balance.

Pg. 78 2.4.3.3 Existing authorities have been used for the placement of mooring facilities and guidewall extensions are provided for at specific locations. Would these not logically also be eligible as without-project small-scale measures?

Response: Measures that improve efficiency need to have the system environmental work completed before anything could be recommended. Funding is also not available.

Pg. 79 2.4.3.4 Reference to "depending on agricultural product demand, agricultural conservation programs, and urban expansion, the presently degraded basin hydrology would likely persist." Not quite sure what is meant by this statement.

Response: Included the word "depending on CHANGES in ag….. The statement is meant to imply that there is little anticipation that large changes in basin-wide hydrology will occur.

Pg. 79 2.4.3.4 Regulations on TMDLs. EPA is currently reviewing the TMDL rules and it is unclear that there will be an enactment of regulations on non-point sources. Currently, the constitutionality of EPA's control is under question, as well as their estimation of the % impact that comes from non-point sources.

Response: Noted.

Pg. 79 2.4.3.4 Reference to "system-wide summaries that predict small amounts of system-wide change mask the importance of change at the local scale" **reinforce the points made earlier about averaging lock delays on the river system, compared to local/specific use delays at critical economic delivery times, especially at LaGrange and Peoria. (ref. Pg. 49 2.4.2.1.10)**

Response: Noted. Additional evaluation of Peoria and LaGrange will be included in the feasibility study.

Pg. 80 2.4.3.4 Is the statement referring to existing environmental management "these actions have not prevented system-wide habitat degradation in the past and will likely not meet existing habitat needs in the future" consistent with statements made to Congress when the success of the EMP was presented along with challenges?

Response: The statement is not inconsistent with the demonstration of needs that was presented to garner long-term support for EMP.

Pg. 80 2.4.3.5 Ref. Without Project Floodplain Conditions – (What is UMIMRA's position on this statement?)

Response: Revised.

Pg. 80 2.4.3.6 Add reference that "***will only continue to gain benefits from the river system if traffic is allowed to stay on the river or increase."***

Response: Concur.

Pg. 80 2.4.3.7 Would add, "***lower standard of living and lost jobs base with a declining economy and environment."***

Response: Partially concur.

Pg. 81 2.5.1.1 If the average double lockage is 1.5 hrs or more and 1200-foot capacity at Mel Price and 27 offer .6 hrs lockage times, would not the savings be "***greater than 50%"***?

Response: Each site and measure will be different. This wording was trying to generalize and not be specific. Each site and measure will be looked at separately.

Pg. 82 2.5.1.1.1.1 Industry assessment of the usefulness of guidewall extensions were positive, but disagreed with the lockage time reduction. (AWO documentation?)

Response: Will be updated in the feasibility study.

Pg. 88 2.5.1.1.1.4 Congestion tolls, while reducing transportation options, provide economic incentive to shift to alternative modes with resulting environmental and social impacts. Congestion tolls would have no impact on the cost and safety challenges associated with double-lockages. (See modal shift studies, MN DOT, Tolliver and IWUB report "Scheduling, Permits and Tolls on the Upper Mississippi River System", 2001; March 2002 RIETF Meeting)

Response: Corps has agreed to evaluate in the feasibility study.

Pg. 89 2.5.1.1.1.5 Tradable permits provide no solution to double-lockage generated congestion. The airline industry's experience resulted in greatly increased fares, no success in relieving congestion and is currently being abandoned.

Response: Corps has agreed to evaluate in the feasibility study.

Pg. 96 & 97 The Habitat Management tools and actions available to address ecosystem restoration are very exciting.

Response: Noted.

Pg. 99 2.5.1.2.2.1 In the course of the discussion on "Existing Modifications," the reader is suddenly presented with an alphabet soup, most of which are first spelled out along with the acronym, but MVP, MVR and MVS are not. Might help to do so.

Response: Concur.

Pg. 100 2.5.2.2.2.1g Where is the analysis that led to this recommendation/contemplation. Is there data to show how much the start of the navigation season would be delayed or impacted by the recommendation to "restrict traffic until buoys are in place at

the starts of each towing season?" Would navigation be restricted each time a buoy became out of place during the season?

Response: The evaluation of and feasibility of these types of measures will be assessed in the feasibility study.

Pg. 101 2.5.1.2.3 Is there any data to assist in characterizing the impact of Water Level Management experiences on the Illinois River. For example, Peoria Pool floodplain has only 3.8% levees and experiences pool drawdowns by as much as 2 feet. With connectivity and water level changes, two of the key ingredients for ecosystem success, have we seen changes different from other reaches of the pooled river?

Response: The Illinois Ecosystem Restoration Feasibility Study is investigating water level control on the Illinois River. Water level management will be an important component of the feasibility study and the Illinois River results will be incorporated.

Pg. 104 2.5.1.3.2 Traffic Management for Environmental Benefits

The recommendation to restrict drafts to six feet during midsummer demonstrates a very disturbing lack of understanding of navigation and the experiences of less drastic attempts. A six-foot draft is closure of river commerce and recreational activity. Towboats could not operate and marinas would be stranded, among other impacts. Efforts to draw down Pool 8 were modified not because of commercial impacts, but because of recreational impacts. Efforts at deeper drawdowns in Pool 13 resulted in unexpected fish impacts. Please provide an appropriate reference for all this activity.

This type of "traffic management for environmental benefits" along with the already insufficient and traffic choking infrastructure faced by navigation, would shut down traffic and cause untold economic devastation to the Midwest. Decreasing capacity by 30% is an unacceptable burden to navigation.

This drawdown would also negatively impact recreational activates including the many marinas whose livelihood is tied to business during the summer months. How will this affect the power companies and industries that rely on the Mississippi River for cooling? How much will energy prices increase? Will this affect the acceptability of the drinking water of over 22 communities who use this source for water? Where in the collaborative process was this alternative presented, discussed and evaluated?

Response: The concern expressed is understood and we are aware of the implications that such a recommendation might have. The purpose of an alternative analysis

is to determine the advantages and disadvantages of each alternative. The economic vs. environmental benefits and impacts will be considered during detailed feasibility assessments to insure sustainability of both uses.

Pg. 104 2.5.1.3.2 To suggest that seasonal traffic closures have merit based on the fact that larvae fish are entrained in towboat propellers is ludicrous. Larvae fish studies have also demonstrated that the propeller impacts are negligible for overall species of fish when compared to the universe of larvae fish and natural accretion.

Response: These issues have obviously not been entirely fleshed out in an interim feasibility level analysis, but there are studies that demonstrate some level of impact to larval fishes. The measures to mitigate increased larval fish mortality may have greater NED costs than the temporary impact to the shipping industry. While we are inclined to agree this is an extreme measure, the details still need to be evaluated during the remainder of the feasibility study.

Pg 106 2.5.1.6 We start out on pg 16 with 11 million visits and how important recreation is to the region. Then we move into 15 million recreation visits, now we lack visitor survey information to clearly identify what our visitors are doing, but we can quantify their activity!!!

Response: The 11 million visitors reported by Black et al. 2000 will be used consistently. Also, this section has been deleted.

Pg. 106 2.5.1.6 Reference the backlog of recreation maintenance should be consistent with referencing the backlog of navigation, flood control and environmental projects and level of effort.

Response: This section has been deleted.

Pg. 107 2.5.2.1 Alternative 2, Congestion fees is identified as limited to commercial traffic, whereas the discussion in the report (pg. 88) identifies likely imposition on both commercial tows and recreational craft. It is important to be consistent in this description.

Response: Congestion fees will be limited to commercial traffic.

Pg. 109 Last paragraph. What scientific basis (empirical evidence) is provided for the statements made regarding the effectiveness of Alternatives B through D individually or collectively?

Response: The Interim Report provided a snapshot of potential measures and its intent was not to conclude effectiveness or impacts. The effectiveness of both navigation improvement and ecosystem restoration measures will be assessed in the feasibility study.

Implementation Issues

Pg. 115 Second paragraph. We presume the lock not included in the 9' channel is Lock #1 (reference "26 locks and dams"), which is under a separate authority for 9'6". Otherwise we don't understand this statement.

Response: Second paragraph deleted. Section 3 has been revised.

Pg. 116-117 Funding. This section aptly represents the challenges in funding a broad range of ecosystem activities, but ignores the challenges faced in securing adequate funding for navigation improvements. Historically, according to the Inland Waterway Users Board, 40% of the funds paid by the industry into the Inland Waterway Trust Fund are accounted for by traffic that originates or terminates in the Upper Mississippi Basin. Only 15% of those funds have been made available for navigation improvements, making this region a "donor" region to the national modernization program.

Response: Noted.

Discussions pertaining to creating "trust funds" for ecosystem cost-sharing should be clear that these concepts are separate and apart from the existing Inland Waterway Trust Fund. Efforts should also be made to clarify the need for developing a broad-based revenue source that adequately taps all other users of the system.

Response: Additional discussion on funding issues has been added to the revised Section 3.

Draft Preliminary Conclusions/Recommendations

Pg. 121 After reading the entire document, limited attempts were made to quantify the current level of investment associated with assuring the ecological integrity of the system. ***Until that gap is substantiated, it would be inappropriate to make this statement in the first paragraph on this page.*** This is important, especially given the six pages of listed programs in Appendix 2.

Response: Section 3 has been revised.

Pg. 121 ***MARC 2000 and related industry partners do not understand the implications for a "System Authority" and do not agree that this concept has been accepted through the collaborative process, except as a preliminary concept.***

Response: Noted. See revisions to Section on authorities.

Pg. 121 Navigation Improvements: This section has clearly been written by someone who has not read the report. First, it should be amended to eliminate the conditionality (If). Regardless, there will be improvements, the question is the magnitude. This section should and could identify the following:

1. There is broad community support for lock modernization on the Upper Mississippi and Illinois Rivers based on participation in the public meetings in the basin and passage of resolutions in legislative chambers in all five states to this effect.
2. The States, through the UMRBA have indicated support for beginning small-scale measures, but remain undecided on whether it is possible to justify new locks or lock extension. All five state legislatures (both chambers in MO, IL, IA, MN and one chamber in WI) have passed, with bi-partisan votes, resolutions in support of moving forward with lock modernization.
3. Characterization of the situation we have now, articulated in 2.5.3.1 along with traffic forecasts generated by the Scenarios, give preliminary indications that large-scale improvements will be necessary and that the risk of not providing such improvements may jeopardize U.S. global competitiveness.
4. Confirmation by independent sources on the importance of an efficient navigation system for continued competition in world markets.
5. Significant average annual economic, social and environmental benefits derived from the urging water use over other modes of transportation.

Response: Noted. Section 3 has been revised.

Pg. 121 Operation and Maintenance – This description lacks cohesion and punch. It is important to reflect the fact that existing O&M activities and maintenance needs make up the largest backlog in the entire inland system and while the system may be important as a flyway, it is equally important as an economic conduit to 60% of our export grain and building blocks of our domestic economy.

Response: O&M backlog discussion will be added.

MARC 2000 and related industry partners are not prepared to acknowledge at this point that environmental O&M should be funded as construction under the Construction, General Account. However, while we understand the concept of addressing cumulative impacts to the ecosystem through the O&M authority, without a Congressional/Administration agreement to

augment O&M funds, this action would deleteriously impact the continued operations of the navigation system. MARC 2000 continues to support enhancing the EMP program as means of increasing the scope and funding mechanism for addressing ecosystem restoration. We do support the recommendation to include a system authority as one of the options to review, but not as definitive recommendation for the Interim Report, at this time. Recommendations 1 and 5 are somewhat contradictory. Recommendation 5 should be amended to reflect "evaluation of a system authority to help provide better focus……"

Response: Noted.

Pg 124 Conclusion/Recommendation #7 - Completion of the study by September 04 is a desired result by all participants in this process and should be stated emphatically, reflecting the overwhelming citizen disdain for an ever continuing $60 million study that seems to have no end.

MARC 2000 and related industries reiterate the obsolescence of the three bullet points and recommend altering them to reflect the balanced approach we seek between economic and environmental sustainability. (see pg. 11 recommended changes).

Response: The schedule for completion is now located in Section 3. The bullets have been deleted and Section 3 has been revised.

Pg. 125 Conclusion/Recommendation 10 - Every effort should be made to capitalize on the advances made in developing the ORNIM model rather than attempting to re-invent the wheel through a costly and time consuming process.

Response: This paragraph has been deleted. Section 3 has been revised.

Pg. 125 Conclusion/Recommendation 11 - This should become new #1 or #2.

Response: This paragraph has been deleted. Section 3 has been revised.